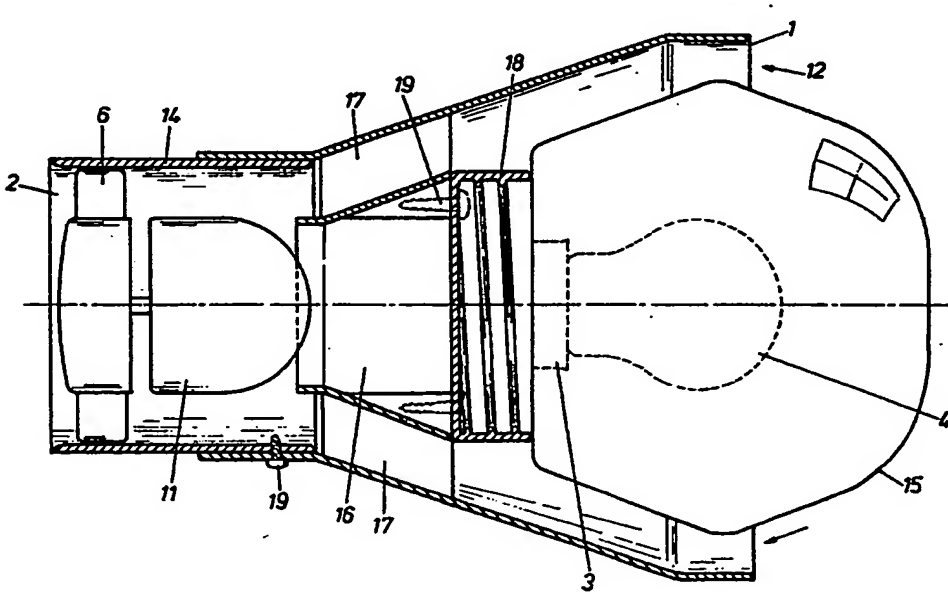




INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

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(21) International Application Number: PCT/DK87/00048 (22) International Filing Date: 4 May 1987 (04.05.87) (31) Priority Application Number: 2069/86 (32) Priority Date: 5 May 1986 (05.05.86) (33) Priority Country: DK (71)(72) Applicant and Inventor: SCHEIBYE, Jens, Karlo [DK/DK]; Smedestrædet 9, DK-4771 Kalvehave (DK). (74) Agent: LARSEN & BIRKEHOLM A/S SKANDINAVISK PATENTBUREAU ; Niels Hemmingsens Gade 32, P.O. Box 39, DK-1002 Copenhagen K (DK). (51) Designated States: AT, AT (European patent), AU, BB, BE (European patent), BG, BJ (OAPI patent), BR, CF (OAPI patent), CG (OAPI patent), CH, CH (European patent), CM (OAPI patent), DE, DE (European patent), DK, FI, FR (European patent),		GA (OAPI patent), GB, GB (European patent), HU, IT (European patent), JP, KP, KR, LK, LU, LU (European patent), MC, MG, ML (OAPI patent), MR (OAPI patent), MW, NL, NL (European patent), NO, RO, SD, SE, SE (European patent), SN (OAPI patent), SU, TD (OAPI patent), TG (OAPI patent), US. Published <i>With international search report.</i> <i>In English translation (filed in Danish).</i>
(54) Title: INSECT TRAP  (57) Abstract In order to achieve the best possible result from an electric insect trap, the light source (4) is surrounded by a light-permeable, preferably blue, globe (15), which has a size that leaves an air gap (1) between the globe and the surrounding tube (13) in which the light source is mounted. Behind the light source the fan (11, 6) is mounted in a tube (14) where this has a smaller cross sectional area than opposite the globe. Hereby a high air velocity is ensured and thus a high degree of effectiveness in that the insects cannot fly across the air current and escape it. Since the globe (15) is easily removed it is easily and quickly cleaned because its surface temperature is low which means that insects do not burn and stick to the surface.		

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INSECT TRAP

5 The invention relates to an insect trap comprising a tube in which an electrically driven fan and an electric light source are provided at the suction side of the fan.

10 Insect traps of this type are used everywhere where flying insects are to be caught and exterminated without the use of toxins.

15 An example of such an insect trap is known from US patent no. 2,893,161. The light source in this example is a circular tube extending within the outer rim of the suction end of the tube.

20 This known construction is, however, encumbered with certain drawbacks. Thus, it is not particularly efficient because insects accumulate around the shining tube, and since the tube functions as a screen for the air current produced by the fan the insects may with no difficulty stay at the front of the tube
25 without being sucked into the tube.

30 Moreover, the mouth at the suction end is expanded which causes such a high reduction of the velocity of the air that large insects may easily fly directly through the air current and escape the insect trap.

It is the object of the invention to overcome this drawback by an insect trap of this kind, and this is achieved by a construction, where a lightpermeable

globe having a size being slightly smaller than the mouth of the tube is mounted around the light source in order that a narrow opening is obtained for the suction air.

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Hereby it is achieved in a surprisingly simple manner to considerably increase the effectiveness of the insect trap, in that the air velocity will be increased considerably along the sides of the globe. In this manner it is impossible for an insect to escape the air current in that it cannot pass through it. Moreover, it has turned out that insects that land at the top of the globe will be liable to crawl out towards the sides of the globe where they are caught by the air current and are sucked into the tube.

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Add to this that this construction is considerably more hygienic and more easily cleaned than are the known insect traps, the reason being that the globe may be removed by releasing it from the socket and then cleaned it in a simple manner as opposed to the known tubes or bulbs which get very hot and therefore dry up the insects and their excrements so that they become very difficult to remove from the light source. Contrary to this, the surface temperature of the globe is much lower, and it is therefore considerably easier to clean. Add to this that the globe can be manufactured of a strong material which may withstand such loads and external impacts as a light source cannot withstand at all.

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By designing the tube as referred to in claim 2, there is achieved a Venturi-like construction which is extremely efficient and economical in operation.

By, as referred to in claim 3, having the top of the globe project a distance, the force of attraction is increased considerably, because the even and soft light emission attracts the insects.

By, as referred to in claim 4, designing the tube as a body of revolution it becomes easy to manufacture and mount in a hole in the wall or in a holder.

Finally, it has turned out that the blue coloured globe, as referred to in claim 5, has proven extremely efficient as bait.

In the following the invention will be described in closer detail with reference to the drawing, in which

fig. 1 is a perspective view of a partly cut section of a known construction,

fig. 2 shows an example of a built-in insect trap, and

fig. 3 is a cross section through an embodiment according to the invention.

Fig. 3 shows an example of a preferred embodiment of an insect trap according to the invention.

It is constructed of two joined tube sections, i.e. a funnel-shaped part 13 and a cylindrical part 14.

The funnel-shaped part 13 is at its largest and smallest diameter cylindrical and truncated cone-

shaped between the said largest and smallest diameter.

5 The cylindrical part 14 may be inserted into the narrowest end of the tube 13 and held there e. g. by means of screws 19.

10 Inside these tube sections the light source and the fan are arranged. The light source comprises a bulb 4 in a socket 3 which is attached to a cylindrical supporting member 16.

15 This supporting member has at its side a number of distance pieces 17, for example four, which can abut the inside of the tube 13 and maybe the end flange of the smaller tube 14.

20 Furthermore, a socket 18 is attached to the supporting member 16 by means of screws 19 for a blue globe 15 surrounding the bulb 4.

25 The globe 15 is dimensioned so that the largest diameter is found inside the outer cylindrical tube section 13. Hereby an encircling opening 1 is produced, which is just big enough for the insects to pass, and which will maintain such a strong vacuum or inwards directed air current 12 that the insects are sucked in through the opening 1 as effectively as possible.

30 The globe 15 is moreover so long that its round end projects a distance beyond the tube 13 in order that the blue light can be emitted over an arc of 180°.

To the opposite end of the supporting member 16 is

fitted an electric motor 11, which over a shaft drives a propeller 6 which by rotation sucks air through the opening 1 and out through the outlet 2.

5 During this rotation such insects 8 as are drifting in the air current are smashed and killed. If there is any risk that not all insects are killed by this method, the outlet can be provided with a net bag (not shown) or a similar object for holding and collecting the insects.

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The insect trap may operate in all positions. It can be built into a wall similarly to the known insect trap, which is shown in fig. 2, or it may be placed in a holder or a similar object.

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When the lamp 4 and the fan 11, 6 are connected to the power source, the insects are attracted by the blue light, which is emitted diffusely via the globe. The insects are thereby either caught by the air current immediately they approach the globe or when they crawl into the air current on the globe. Hereby they are led through the tube and in through the fan wheel, where they are killed prior to being sent out at the other end of the insect trap, where they may be collected, if necessary.

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P A T E N T C L A I M S

1. Insect trap comprising a tube in which an electrically driven fan and an electric light source are provided at the suction side of the fan, characterized in that a lightpermeable globe (15) having a size being slightly smaller than the mouth of the tube (13) is mounted round the light source (4) in order that a narrow opening (1) is obtained for the suction air (12).
2. Insect trap according to claim 1, characterized in that the cross sectional area of the tube (13) decreases from the suction end to the outlet end (14) in which the fan (11, 6) is situated.
3. Insect trap according to claims 1 and 2, characterized in that the top of the globe (15) projects a distance beyond the suction end of the tube (13).
4. Insect trap according to claims 1-3, characterized in that the inner cross sectional shape of the tube (13, 14) is circular at any point thereof.
5. Insect trap according to claims 1-4, characterized in that the globe (15) is blue.

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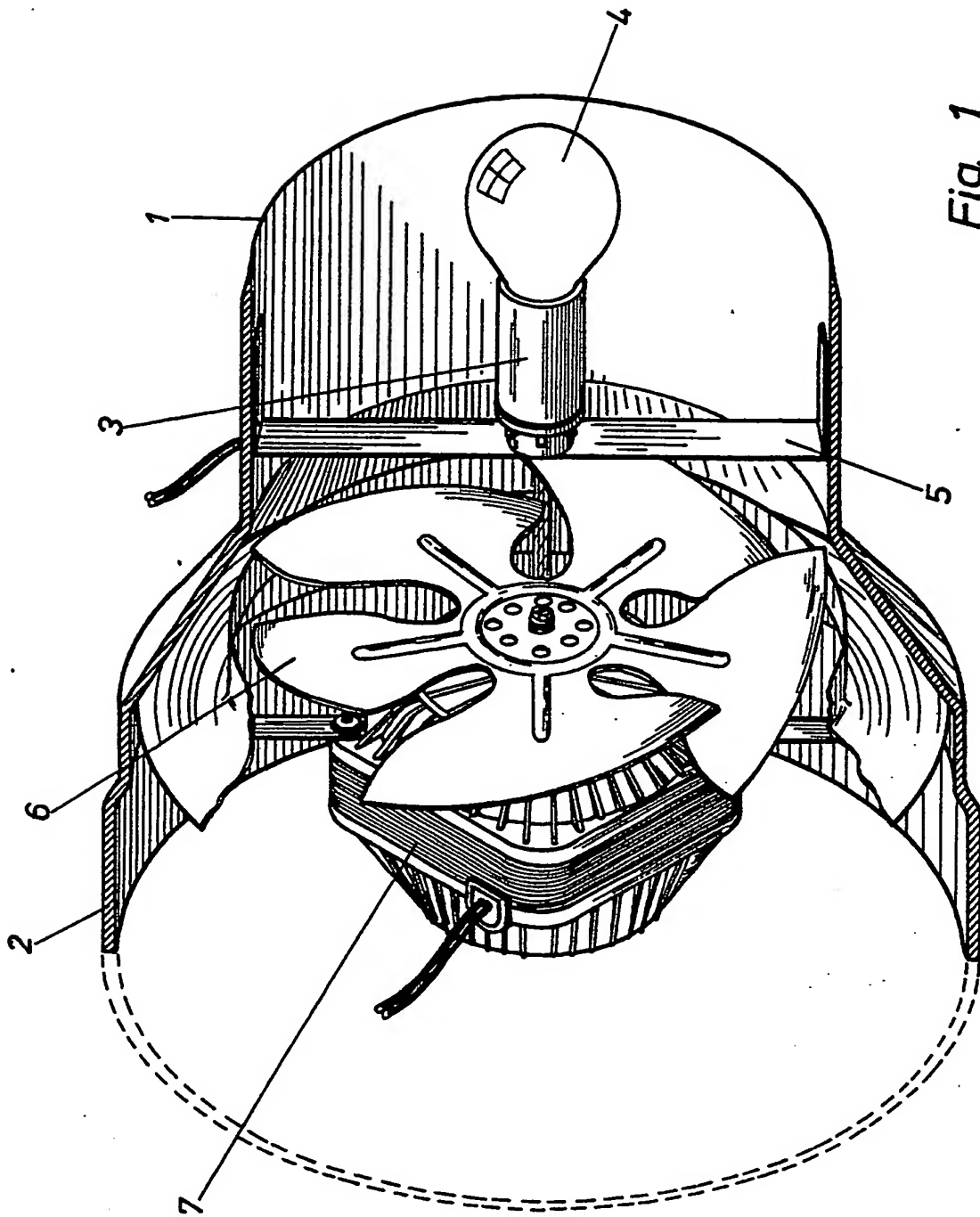


Fig. 1

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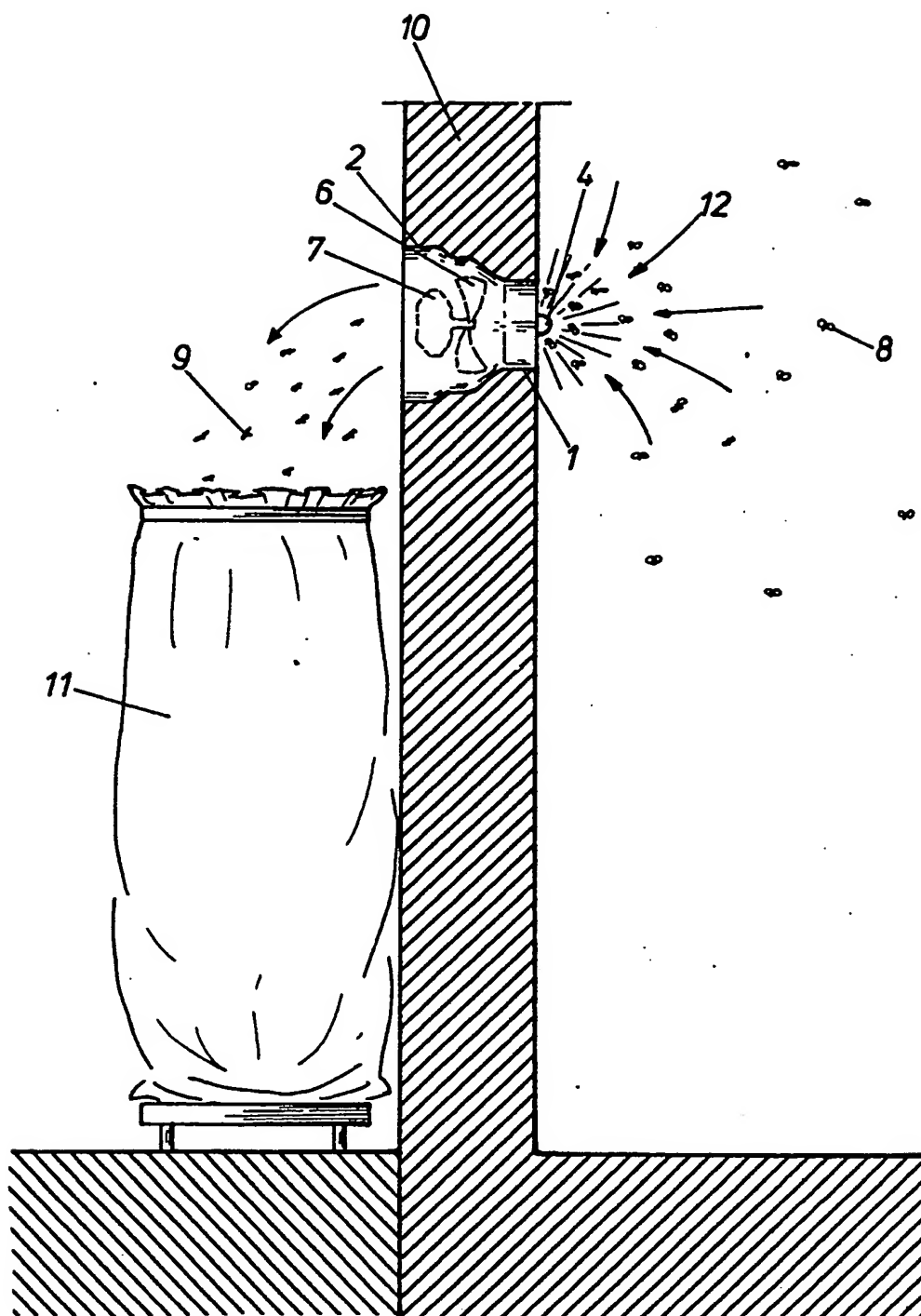


Fig 2

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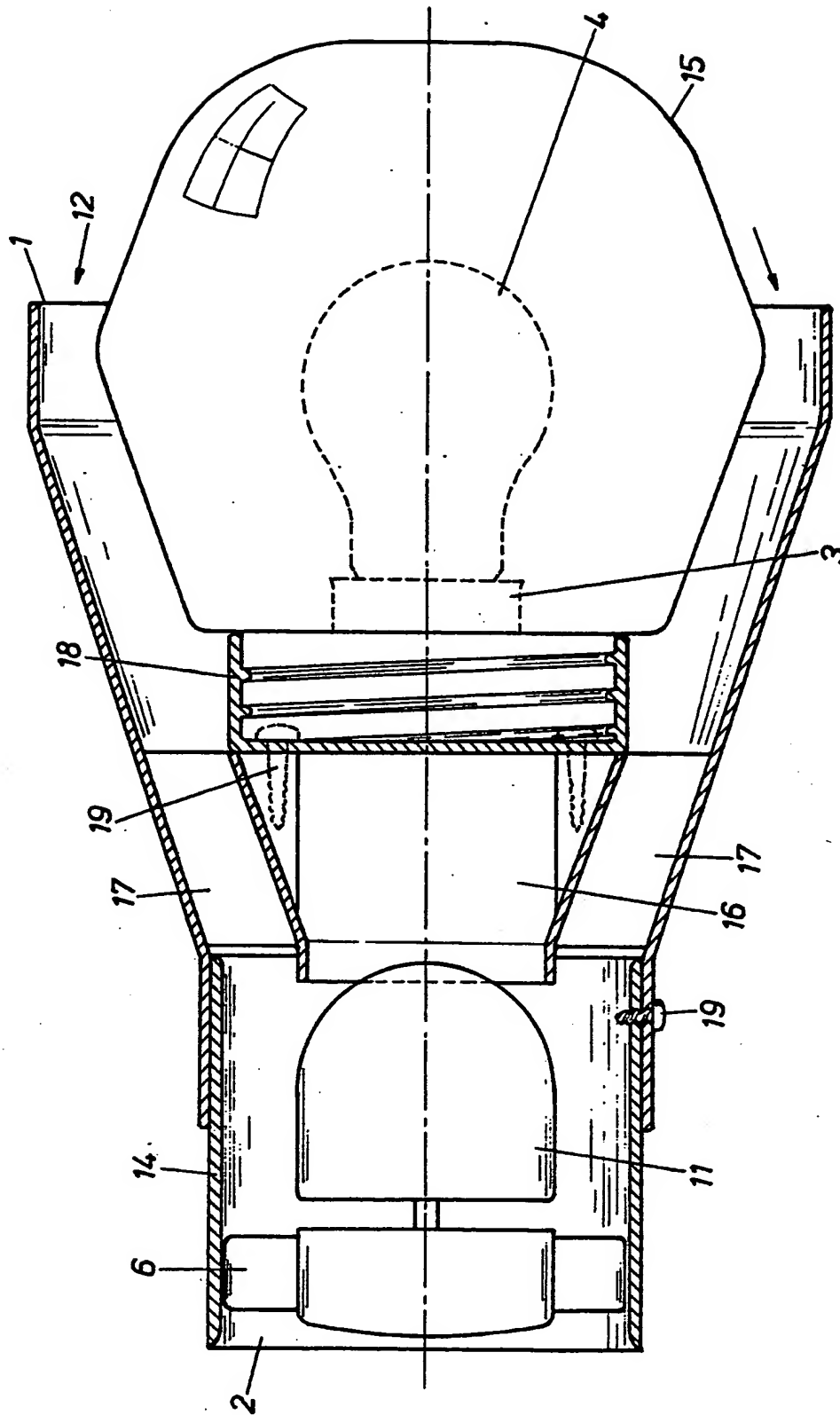
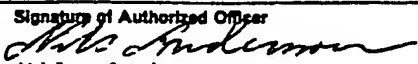


Fig. 3

INTERNATIONAL SEARCH REPORT

International Application No PCT/DK87/00048

I. CLASSIFICATION OF SUBJECT MATTER (If several classification symbols apply, indicate all) ⁶		
According to International Patent Classification (IPC) or to both National Classification and IPC		
A 01 M 1/08		4
II. FIELDS SEARCHED		
Minimum Documentation Searched ⁷		
Classification System	Classification Symbols	
IPC 4 US C1	A 01 M 1/00-/08 43:113, 138, 139	
Documentation Searched other than Minimum Documentation to the extent that such Documents are included in the Fields Searched ⁸		
SE, NO, DK, FI classes as above		
III. DOCUMENTS CONSIDERED TO BE RELEVANT ⁹		
Category ⁹	Citation of Document, ¹¹ with indication, where appropriate, of the relevant passages ¹²	Relevant to Claim No. ¹³
Y	FR, A, 810 365 (A C GUILLOT) 20 March 1937	1, 3, 4
Y	FR, A, 1 102 124 (É L R MOULIN) 17 October 1955	1-4
Y	US, A, 1 484 369 (C ANDREUCCI) 19 February 1924	1, 3, 4
Y	US, A, 1 671 404 (G C CHERRY) 29 May 1928	1, 2, 4
X	US, A, 2 236 698 (L J L RECTOR) 1 April 1941	1-4
Y	US, A, 4 141 173 (J F WEIMERT ET AL) 27 February 1979	1-4
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IV. CERTIFICATION		
Date of the Actual Completion of the International Search		Date of Mailing of this International Search Report
1987-06-11		1987-07-12
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